

**METHOD AND COMPUTER PROGRAM PRODUCT FOR
PRECISE FEEDBACK DATA GENERATION AND UPDATING FOR
COMPILE-TIME OPTIMIZATIONS**

Abstract

5 A method and computer program product, within an optimizing compiler, for precise feedback data generation and updating. The method and computer program uses instrumentation and annotation of frequency values to allow feedback data to stay current during the multiple optimizations that the program code undergoes during compilation. Global propagation of known precise feedback values are used to replace approximate and unavailable values, and global verification of feedback data after optimization to detect discrepancies is employed. The method and computer program also provides improved instrumentation to anticipate cloning when code is cloned during certain compiler optimizations and handles inlined procedures. The result is compiled executables with improved SPECint benchmarks.

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